# Course list for Cross-Institutional Course Enrolment (Semester 2, 2022-23)

## Faculty of Education
## The University of Hong Kong

**Last update: November 25, 2022**

| Course Code | Course Title | Level (RPG/TPG) | Pre-requisites | Class Dates | Class Time | Venue | Quota for Non-HKU Students (if any) | Course Syllabus URL | Contact Information (Name & Email) | Remarks (Please specify if the medium of instruction is NOT English) |
|---|---|---|---|---|---|---|---|---|---|---|
| EDUR7116 | Qualitative Survey Design | RPG | / | Feb 1, 8, 15 and 22, 2023 (Wednesdays) | 18:30 - 21:30 | MB121 | / | Please refer to the attached course outline | Ms. Triffic Cheung trifficc@hku.hk | / |
| EDUR8103 | Transdisciplinary Research Design and Implementation Science | RPG | / | Feb 6, 13, 20, 27; Mar 13, 20, 27; Apr 3, 2023 (Mondays) | 18:30 - 21:30 | MW103 | / | (same as above) | (same as above) | / |
| EDUR7070 | Learning Theories and Educational Models for the 21st Century | RPG | / | Feb 3, 10, 17, 24; Mar 3, 17, 24, 31; Apr 14 and 21, 2023 (Fridays) | 18:30 - 21:00 | MW549 | / | (same as above) | (same as above) | / |

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**THE UNIVERSITY OF HONG KONG**
**Faculty of Education**
**Academic Year 2022-23**

# EDUR7116 Qualitative Survey Design

## Introduction

This course focuses on qualitative survey design. Survey design is an extremely popular way to conduct educational research, but guidebooks dominantly focus on quantitative research designs. Moreover, even though mixed methods surveys have been used to collect open-ended responses for a long time, very little is known about surveys that are not only designed for collecting qualitative data but that prioritize qualitative values and worldviews (Braun et al., 2021). This course focuses exactly on this. The course will address in-depth qualitative data collection methods through online surveys.

## Teacher(s)

Dr Juuso Henrik NIEMINEN

## Course objectives

The Course Objectives (COs) are as follows:

1. Introduction to qualitative survey design for both inductive (data-driven) and deductive (theory-driven) research.
2. Qualitative item design for nuanced, in-depth responses.
3. Qualitative surveys for sensitive topics (e.g., sexuality).
4. Analysis of qualitative survey data.

## Course duration

12 hours

## Course topics

- Introduction: what kinds of research questions can be answered through qualitative survey design?
- Sampling in qualitative surveys.
- Piloting surveys.
- Survey design.
- Sensitive survey design.
- Qualitative data analysis (specifically for qualitative surveys).

## Course learning outcomes

The course Learning Outcomes (LOs) are linked directly to the four COs, of which the first one is introductory. After the course, the participants are able to:

1. Analyse when to use qualitative surveys (compered to, for example, interviews);
2. Design survey items for nuanced, in-depth responses;

3. Conduct qualitative surveys on sensitive topics; and
4. Analyse qualitative survey data.

**Key readings**

- Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2021). The online survey as a *qualitative* research tool. *International Journal of Social Research Methodology*, 24(6), 641-654.

- Terry, G., & Braun, V. (2017). Short but often sweet: The surprising potential of qualitative survey methods. In V. Braun, V. Clarke, & D. Gray (Eds.), *Collecting qualitative data: A practical guide to textual, media and virtual techniques* (pp. 15–44). Cambridge University Press.

**Assessment methods**

| Assessment (weighting of each assessment) | Learning outcome(s) to be assessed |
|---|---|
| The students need to complete a homework task after each of the four sessions (25% each) and attend all the sessions. | Outcomes 1, 2, 3 and 4 |

**Minimum attendance requirement**

Students are expected to attend all lectures.

**Course pre-requisite**

Nil

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# EDUR8103 Transdisciplinary Research Design and Implementation Science

## Introduction

As the World is becoming more complex and increasingly multi-, inter- and beyond-disciplinary, solving complex problems, conducting research studies and handling grand challenges of our time, require approaches that transgress disciplinary practice and create new synergies. Transdisciplinarity is not just about building upon collective knowledge within disciplines and integrating these in solutions to problem-solving and research. Instead, it fundamentally leads to the design of new trans-methodological approaches and the generation of innovative solutions and knowledge that cannot be identified within any discipline alone.

This course explores transdisciplinarity, as currently theorised, within different academic communities and how that framework offers an insight into a new way of thinking about education, science, design and research. Another critical area of inquiry in this course focuses on how research outcomes can be taken to the '3rd space' to advance practice and impact the world beyond academia. The outcome is to create sustainable impact, educate the next generation of remarkable people to lead change and develop innovative researchers that help us adapt to our changing World. In this context, the course will explore integration and implementation sciences as a methodological approach for collaboration with communities and advancement of practice with societal impact.

## Teacher(s)

Dr Daniel CHURCHILL

## Course objectives

The course aims to expose students to the transdisciplinary theoretical and methodological concepts which would ultimately advance their theorising, research conceptualisation and impact potential and disposition. The course will achieve this by engaging students to discuss, explore and apply transdisciplinarity to complex problems and research that requires integration beyond core disciplines. Students will examine approaches by going beyond methodologies and concepts from their disciplines and their research plans, thus leveraging upon transdisciplinarity in reaching beyond academia with a profound impact on practice.

## Course duration

24 hours

## Course topics

1. Transdisciplinary-Interdisciplinarity-Multidisciplinary-Disciplinarity approaches
2. Zurich School v Nicolescuian Transdisciplinarity
3. Anti-disciplinary Design, Science, Research and Education
4. Transdisciplinary Approaches – STEM+, Digital Humanities, Social Justice Studies and Sustainability Education
5. Radical Constructivism, Activity Theory, 2$^{nd}$ and 3$^{rd}$ Order Cybernetics as Frameworks for creating 'transdisciplinary knowledge' through research.

6. Implementation and Integration Science

**Course learning outcomes**

Upon completion of this course, students should be able to:

1. Discuss the theoretical foundation of transdisciplinary education and research in the changing World;
2. Explore application of transdisciplinarity in a research design; and
3. Apply Implementation and Integration Science approaches to further impact of research outcomes.

**Key readings**


- Aneas, A. (2015). Transdisciplinary technology education: a characterisation and some ideas for implementation in the university. *Studies in Higher Education*, *40*(9), 1715-1728.

- Bammer, G. (2017). Should we discipline interdisciplinarity?. *Palgrave Communications*, *3*(1), 1-4.

- Bauer, M. S., & Kirchner, J. (2020). Implementation science: What is it and why should I care?. *Psychiatry research*, *283*, 112376.

- Bauer, M. S., Damschroder, L., Hagedorn, H., Smith, J., & Kilbourne, A. M. (2015). An introduction to implementation science for the non-specialist. *BMC psychology*, *3*(1), 1-12.

- Daneshpour, H., & Kwegyir-Afful, E. (2021). Analysing Transdisciplinary Education: A Scoping Review. *Science & Education*, 1-28.

- Heylighen, F., & Joslyn, C. (2001). Cybernetics and second-order cybernetics. *Encyclopedia of physical science & technology*, *4*, 155-170.

- Ito, J. (2016). Design and science. Journal of Design and Science. MIT Press.

- Klein, J. T. (2004). Prospects for transdisciplinarity. *Futures*, *36*(4), 515-526.

- Lepskiy, V. (2017). Evolution of cybernetics: philosophical and methodological analysis. *Kybernetes*.

- Nicolescu, B. (2014). Methodology of transdisciplinarity. *World Futures*, *70*(3-4), 186-199.

- Nicolescu, B. (2012). Transdisciplinarity: the hidden third, between the subject and the object. Human and Social Studies, (01), 13-28.

- Nicolescu, B. (2006). Transdisciplinarity: past, present and future. In Congresso Mundial de (pp. 1-24).

- McGregor, S. L. (2014). Introduction to special issue on transdisciplinarity. *World Futures*, 70(3-4), 161-163.

- McGregor, S. L. (2015). Transdisciplinary knowledge creation. In Transdisciplinary professional learning and practice (pp. 9-24). Springer, Cham.

- McGregor, S. L. (2004). The nature of transdisciplinary research and practice. *Kappa Omicron Nu human sciences working paper series*.

- McGregor, S. L. (2014). Transdisciplinarity and conceptual change. World Futures, 70(3-4), 200-232.

- McGregor, S. L., & Volckmann, R. (2013). Transversity: Transdisciplinarity in higher education. *Leading transformative higher education*, 58-81.

- Mittelstrass, J. (2011). On transdisciplinarity. *Trames*, *15*(4), 329-338.

- Petrie, H. G. (1992). Chapter 7: Interdisciplinary Education: Are We Faced With Insurmountable Opportunities?. *Review of research in education*, *18*(1), 299-333.

- Rigolot, C. (2020). Transdisciplinarity as a discipline and a way of being: complementarities and creative tensions. *Humanities and Social Sciences Communications*, *7*(1), 1-5.

- Rigolot, C. (2021). Organising and better understanding transdisciplinarity in the context of artificial intelligence expansion: a crucial role for the new alliance between economics and engineering. *Journal of Industrial and Business Economics*, *48*(4), 615-620.

- Schilling, H. K. (1966). The Unity of Knowledge. *The Journal of General Education*, 251-258.

- Scholz, R. W. (2020). Transdisciplinarity: science for and with society in light of the university's roles and functions. *Sustainability science*, *15*(4), 1033-1049.


**Assessment methods**

| Assessment (weighting of each assessment) | Learning outcome(s) to be assessed |
|---|---|
| ***Presentation and written proposal (60%)***<br>Participants will critically analyse their projects through the lens of transdisciplinarity and deliver a presentation and 3,000 words written proposals outlining any plans for improvements in research designs. | Outcomes 1 and 2 |
| ***Presentation and written plan (40%)***<br>Participants will examine their research designs and outline implementation of their project outcomes beyond academia and with a clear impact on practice in their respective professional fields/disciplines (a presentation and 2,000-words written plan). | Outcomes 1 and 3 |

**Minimum attendance requirement**

6 out of 8 sessions

**Course pre-requisite**

Nil

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# EDUR7070 Learning Theories and Educational Models for the 21st Century

## Introduction

This course provides a foundation in the interdisciplinary field of learning sciences, and introduces students to contemporary learning theories, pedagogical and technological designs and empirical research focusing on how people learn and how to promote learning (K-12, tertiary, informal). The course includes topics on theoretical foundation of learning and learning processes (socio-cognitive, metacognitive, epistemic), pedagogical designs including scaffolding, design principles and design-based research, and contemporary learning issues of equity, impact and scaling. Research examples range from classroom studies, teacher learning and policy studies to provide class members with different perspectives.

The interdisciplinary field of the learning sciences operates at the intersection of (1) theories about learning, (2) design, pedagogy and technology, and (3) real-world educational contexts. Learning sciences is primarily premised on theories of learning emphasizing social and situated perspectives; designing innovative pedagogy and technology and theorizing learning is a key theme. A wide range of research methodology is employed in learning sciences and a distinctive approach is design-based research involving teacher-researcher collaboration. Learning sciences emphasizes conceptual knowledge and research studies are typically undertaken in rich-content areas including science, mathematics, social studies, and literacy in formal and informal settings (e.g., museums) Technology includes computer-supported learning environment as well as curriculum and material resources, focusing on how technology and artefacts mediate learning processes and outcomes. Learning sciences researchers work with teachers in classrooms conducting design-based research for synergistic advance- teacher learning, policy study and scaling for more educational impacts are also key research areas.

## Teacher(s)

Dr Gaowei CHEN and Professor Carol CHAN

## Course objectives

This course aims to provide an overview of theoretical perspectives and contemporary research on how people learn for graduate students and educators undertaking research on learning, teaching and professional development to enrich their research perspectives. This course is particularly relevant in light of the complex and changing educational scene and how teachers and students can be more effective learners and innovators responding to the effects of pandemics on learning. There are now numerous graduate programs and courses on learning sciences in the US, Europe, and Australia (Network of Academic Programs in the Learning Sciences, NAPLES). The International society of Learning Sciences has two flagship journals (Journal of the Learning Sciences and International Journal of Computer-Supported Collaborative Learning) that both have high impact factors in the field of Education and Educational Research.

1. To help students develop a basic understanding of theoretical foundation and principles that explain how learning take place -
    - Major learning theories of how people learn and foundation of learning sciences and historical development of learning theories;
    - Different theoretical perspectives including social constructivism, metacognition, situated

learning, epistemology, and the ICAP framework (passive, active, constructive, interactive);

2. To help students become familiar with pedagogical designs that help inform how to evaluate and design learning environments -
   - Major concepts (e.g., scaffolding) and design principles when designing learning environments (e.g., prior knowledge, metacognition, authentic learning);
   - major design approaches and learning environments based on learning theories and design principles, including project-based learning, PBL, scientific inquiry, argumentation, classroom dialogue, computer-supported collaborative learning, knowledge building and including teacher learning and policy studies;

3. To help students understand a range of research methodologies employed in learning research -
   - The range of research methodologies used including quantitative, qualitative and mixed-methods and introducing the distinctive methods of design-based approach and design-based implementation approaches;
   - Preliminary understanding of how to conduct data analysis obtained in classroom and online settings; use research examples to learn about research methodology;

4. To help students develop insights into their own learning and research -
   - Drawing from these theories and research and develop a conceptual/design framework and perspective for their own research; and
   - Presenting research ideas and engaging in online discussion for collaborative practice.

**Course duration**

25 hours

**Course topics**

The course will be conducted as 10 seminars each of 2.5 hours and the following areas will be included. For each topic, the research methods used in Learning Sciences will also be discussed.

Sessions
1. General intro to learning sciences
2. Metacognition, self-regulated learning, and collaboration
3. Epistemic cognition
4. Scaffolding, situated cognition, and the ICAP framework
5. Research methods in the learning sciences
6. Problem-Based and Project-Based Learning
7. Inquiry-Based Learning and knowledge building
8. Accountable Talk and Dialogic Education
9. Teacher Learning and Professional Development
10. Online Discourse, digital environments and analytics
11. Emerging theme: equity and social justice
12. Summary of Learning

The module is run as a seminar, which means that students are required to read about 2 papers to prepare for each session and be prepared to discuss them in class and in a discussion forum. We use one discussion

forum in Moodle for this, with subtopics. We also expect you to be active participants during the class sessions.

Each student further is part of a duo that presents one paper. After studying the paper closely, you design a session of about 30 to 45 min. that deals with the topic. The session should be interactive—not just a PPT (max. 20 slides). Other students also are expected to make themselves familiar with the paper before the session.

**Course learning outcomes**

Upon completion of this course, students should be able to:

Relating to Objective 1

1) Acquire a basic understanding of the theoretical foundation, processes, and principles that explain how people learn and how learning takes place; familiarize with different perspectives including social constructivism, situated learning, metacognition, epistemology and the ICAP framework and application in contexts
2) Develop a basic understanding of the distinctive features and goals of the learning sciences as an inter-disciplinary area of work relevant to education; and to enhance their own research in other disciplines (e.g., psychology of education) and subject-based approaches (e.g., math education).

Relating to Objective 2

3) Develop knowledge about key design principles and apply the understanding to their own research and/or teaching; develop knowledge about some prominent learning environments based on learning theories and design principles.
4) Develop detailed knowledge of at least one approach, learning environment, or issue that could be the foundation for a study, and more rudimentary knowledge of at least a few others.

Relating to Objective 3

5) Develop knowledge of a range of research methodologies through reading and discussing the empirical studies including an understanding of design-based research
6) Develop knowledge and skills on designs and analysis through interpreting and learning from research papers

Relating to Objective 4

7) Draw insights from the learning sciences literature and to enrich their perspectives that informs their own ongoing research.
8) Become more engaged and adept in learning through presentation, engaging in online discussion and collaborative inquiry

**Key readings**

- Sawyer, R.K. (Ed.) (2022), *The Cambridge handbook of the learning* sciences (3rd Ed.). New York, NY: Cambridge University Press. This handbook provides an introduction and broad overview of the key topics in Learning Sciences and it is a useful reference for beginners in the field.
- Fischer, F., Hmelo-Silver, C. E., Goldman, S. R., & Reimann, P. (Eds.) (2018). *International handbook of the learning sciences*. New York, NY: Routledge.
- NASEM (2018). *How people learn II: learners, contexts and cultures*. Washington, DC: The National Academy Press.
- van Aalst, J. et al., (2022). Learning sciences research and teaching. Routledge, Taylor and Francis.

The weekly readings will be journal articles selected from key journals in the field and will be uploaded to Moodle at least one week in advance.

**Assessment methods**

| Assessment (weighting of each assessment) | Learning outcome(s) to be assessed |
|---|---|
| ***Contribution to a shared knowledge base (50%)***<br>This includes regular contributions to discussions, and leading the in-class discussion of one paper (minimum 8-10 notes). | Outcomes 1, 2, 3, 4, 5, 6, 7 and 8 |
| ***Individual paper (50%)***<br>The paper should be of 3,000 – 4,000 words. Please refer to the following notes for details. | Outcomes 1, 2, 3, 4, 5, 6, 7 and 8 |

**Individual Paper**

Identify a topic of interest from what you have learned in this course for in-depth study.
Consider how this topic/issue/theme is examined by researchers in the field focusing on 2-3 of the key journals (see the list). Provide an overview of how this topic has been examined and reported by researchers in these major journals in the last few years (since 2010). As needed, you can include seminal/significant papers beyond the time period and include papers in other journals or book chapters).

*Write a review of the topic providing a general overview and what papers have been published in the key journals identifying the key conceptual themes discussed, research methods used, key findings, significance and future direction. You may choose to provide an overview and focus on three selected papers for insights and evaluation. You will also write about how these research themes and methods and findings have implications for your own thesis research project.*

Suggested Journals: *Journal of the Learning Sciences, International Journal of Computer-Supported Collaborative Learning, Learning and Instruction, Instructional Science, Educational technology Research and Development, Computer & Education, Teaching and Teacher Education, Contemporary Educational Psychology.*

**Minimum attendance requirement**

8 out of 10 sessions

**Course pre-requisite**

Nil

*(Version of November 9, 2022)*